

TO THE MEMORY OF GILBERT L. VOSS:
PORTUNUS VOSSI, A RARE NEW SPECIES OF SWIMMING CRAB
(DECAPODA: BRACHYURA: PORTUNIDAE) FROM THE
WEST COAST OF FLORIDA

Rafael Lemaitre

ABSTRACT

A new species of swimming crab, *Portunus vossi*, is described from the west coast of Florida. The new species resembles *Portunus ordwayi* (Stimpson), but can be differentiated by the shape of the frontal teeth, the armature of the merus of the swimming leg, and the absence of iridescence on the chelae. The material of the new species was collected using a triangle dredge during environmental studies of the southwest Florida shelf ecosystem. The new species is apparently rare, or because of its possible burrowing behavior, has previously escaped more conventional sampling methods, such as otter trawls.

Swimming crabs of the genus *Portunus* are ubiquitous representatives of the macro-crustacean fauna in tropical and subtropical habitats of the western Atlantic. Perhaps because of their abundance and relatively large size, they are generally well known taxonomically (Rathbun, 1930; Holthuis, 1959; 1969; Williams, 1984). Thus, while identifying a large collection of brachyuran crabs obtained during environmental studies of the eastern Gulf of Mexico, it was somewhat surprising to discover specimens representing a new species of *Portunus*. *Portunus vossi* n. sp., is apparently rare as it was found only in a relatively small area during extensive sampling programs from 1980-1987, on the west coast of Florida. Subsequently, additional material was found on the northwestern coast of Florida in 1988 and 1989. The new species is described, bringing to 15 the total number of species of this genus known from the western Atlantic, 13 of which occur in the Gulf of Mexico.

The material of the new species has been deposited in the collections of the Smithsonian Institution, National Museum of Natural History (USNM). Measurements were taken using a dial caliper or with an ocular micrometer (measured to the nearest 0.1 mm), and are reported following the method of Garth and Stephenson (1966), e.g., "13.9 × 35.6 (24.1) mm," the numbers referring to "total length × total width (width less anterolateral teeth)." The abbreviation CSA refers to Continental Shelf Associates, Inc., and SOFLA to Southwest Florida Shelf Ecosystems Study.

Portunus vossi new species

Figures 1, 2

Holotype.—1 ♂, 17.4 × 29.0 (24.0) mm, SOFLA Station 13, triangle dredge, 25°45'46"N, 82°09'21"W, 19.6 m, 28 April 1981, coll.: CSA, USNM 239279.

Material Examined.—2 ♀, 30°06'N, 87°20'W, triangle dredge, 24.5 m, 18 March 1989, coll.: CSA, USNM 239280; 1 ♀, 29°56'N, 87°46'W, triangle dredge, 30 m, mud bottom, 23 April 1988, coll.: CSA, USNM 239281; 1 ♂, 120 miles north of Dry Tortugas, triangle dredge, coralline algal rubble and *Halophila decipiens* Ostenfeld seagrass bed, 24-29 m, 9 August 1987, coll.: CSA, USNM 239282; 5 ♂, SOFLA station 13, triangle dredge, 25°45'46"N, 82°09'21"W, 19.6 m, 8 November 1980, 29 July 1981, coll.: CSA, USNM 239283, 239284.

Measurements.—males: 11.0 × 20.0 (15.5) to 18.3 × 31.0 (24.8) mm; females: 12.2 × 19.8 (15.8) to 19.8 × 34.0 (27.8) mm.

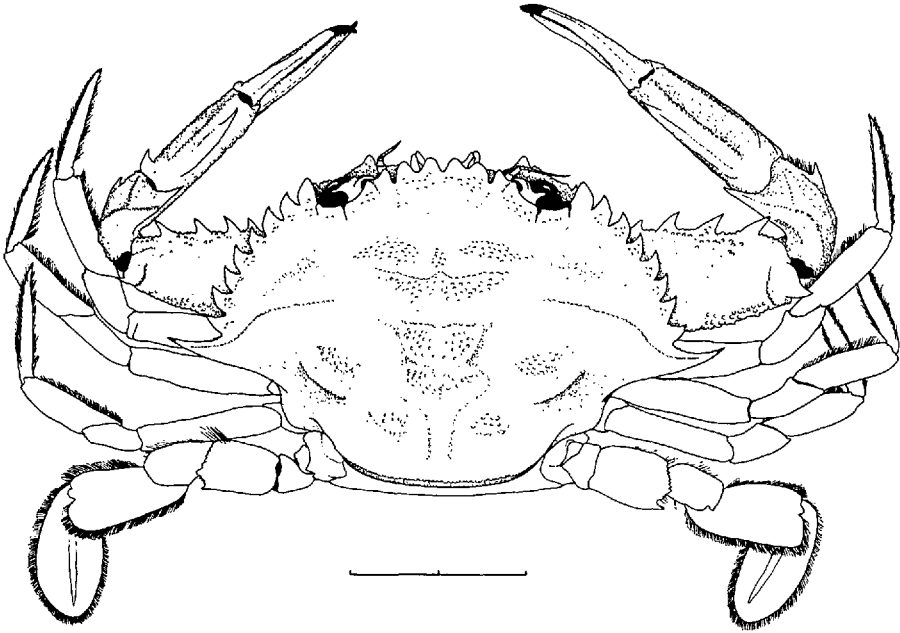


Figure 1. *Portunus vossi* new species, holotype (USNM 239279). Scale equals 10 mm.

Description.—Carapace (Fig. 1) about 1.6–1.8 times as long as broad (including last anterolateral tooth). Anterolateral margins forming an arc of a circle with center near middle of cardiac region. Regions of carapace distinct, more or less elevated. Dorsal surface covered with very short pubescence (visible under high magnification); unevenly covered with granules on frontal lobes, dorsal and ventral surface of anterolateral teeth, and on protogastric, mesogastric, metagastric, cardiac and lateral postcardiac regions; granulated ridges present as follows: one transverse ridge separating protogastric from mesogastric region, one transverse, sinuous epibranchial ridge on each side, and one oblique ridge on each posterior mesobranchial region. Front with four (two submesial, two lateral) rounded teeth separated by U-shaped sinuses, and two subtriangular inner supraorbitals; submesial teeth extending slightly beyond laterals; inner supraorbital tooth incompletely divided into inner (largest) and outer (smallest) teeth, and separated from frontal lateral tooth by narrow, deep U-shaped sinus. Supraorbital margin granulated, with two incomplete fissures. Infraorbital margin granulated, with subtriangular inner tooth, and outer V-shaped fissure separating two subtriangular teeth. Basal segment of antenna forming a rounded tooth extending into orbit. First anterolateral tooth (outer orbital) blunt; anterolateral teeth 2–9 sharp, with dark-colored tips; last anterolateral tooth twice or more as long as preceding tooth, weakly curved anteriorly. Third maxillipeds as figured (Fig. 2a).

Chelipeds (Fig. 2b, c) slender, with granules slightly larger than those on carapace; with granulated ridges and spines with dark-colored tips. Merus with 4–5 strong spines on anterior margin, and sharp granules between spines; posterior margin with granules and distal spine. Carpus with strong inner spine, outer ventrodistal spine, and two longitudinal granulated ridges on dorsal and dorso-lateral surface. Palm with two spines, one on dorsal margin near articulation of dactyl, and one on outer proximal surface adjacent to carpus; outer surface with

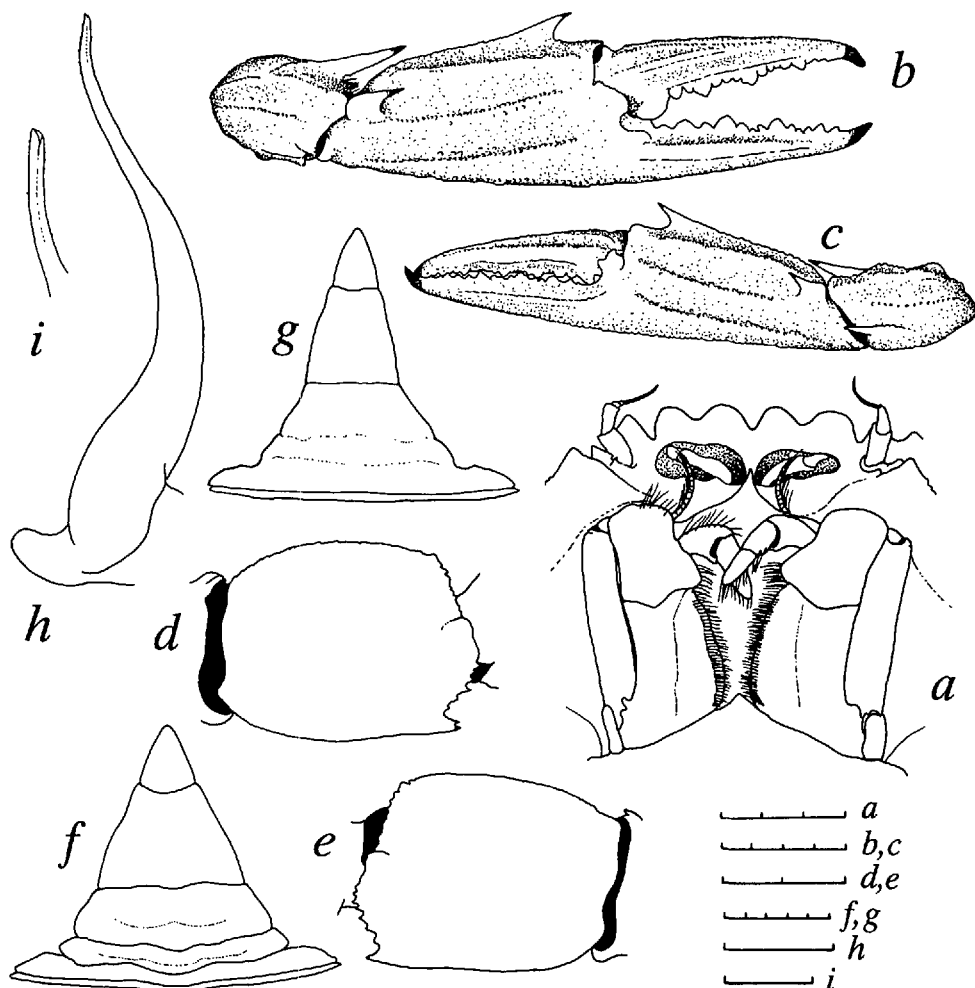


Figure 2. *Portunus vossi* new species, holotype (USNM 239279). a, 3rd maxillipeds and frontal region, ventral view; b, c, carpus and chela of right (b) and left (c) chelipeds, outer view; d, e, merus of right (d) and left (e) swimming legs, dorsal view; f, female abdomen; g, male abdomen; h, male right 1st pleopod, posterior view; i, distal portion of same. Scales equal 3 mm (a), 4 mm (b, c), 2 mm (d, e), 5 mm (f, g), 1 mm (h), 0.5 mm (i).

three longitudinal granulated ridges, lacking iridescence. Fingers straight except for curved, crossed tips, and longitudinally ribbed; cutting edges with strong, subtriangular or rounded unequal teeth; movable finger with scattered setae.

Pereopods 2-4 (walking legs) unarmed; propodus and dactyl with fringe of setae on ventral and dorsal margins. Pereopod 5 (swimming leg) covered with short, dense setation (visible under high magnification) on dorsal surface of merus, carpus, propodus, and median region of dactyl. Merus of pereopod 5 (Fig. 2d, e) longer than broad; dorsodistal margin armed with row of small spines; postero-distal margin with strong spine (often bifid).

Male abdomen (Fig. 2g) with penultimate segment with weakly curved lateral margins. Male first pleopod (Fig. 2h, i) sinuous in posterior view, not reaching level of suture between sixth and seventh thoracic sternites; distal portion with

minute, microscopic spinules. Female abdomen (Fig. 2f) broadly triangular. Female gonopores narrow, transversely ovoid.

Remarks.—In the western Atlantic, *Portunus vossi* is one of six species in the genus with a narrow carapace (with anterolateral margins forming an arc of a circle with center near middle of the cardiac region), and an armed merus on the swimming leg. The other species sharing these characters with the new species are: *P. bahamensis* Rathbun, *P. ordwayi* (Stimpson), *P. sebae* (H. Milne Edwards), *P. spinicarpus* (Stimpson), and *P. spinimanus* Latreille. The new species most closely resembles *P. ordwayi*, from which it can be separated by the shape of the frontal teeth, the armature of the merus of the swimming leg, and the presence or absence of iridescence on the chelae. In *P. vossi*, the frontal teeth are rounded, the lateral frontal tooth is separated from the inner orbital by a narrow U-shaped sinus, the chela lacks iridescent areas, and the merus of the swimming leg has a strong (often bifid) posterodistal spine in addition to small spines on the dorso-distal margin. In *P. ordwayi*, the frontal teeth are acute, the lateral frontal tooth is separated from the inner orbital by a wide U-shaped sinus, the chela is iridescent on the outer surface of the palm (at least in the adults), and the merus of the swimming leg lacks a spine on the posterodistal angle.

Ecological and Biogeographical Remarks.—This new species was initially found in a small area near Naples, on the southwest coast of Florida. During extensive sampling as part of the SOFLA investigations, six specimens were collected on three separate cruises only at one station (SOFLA station 13). Subsequently, several more specimens were obtained further north on the west coast of Florida, first off Fort Myers, and later south of Pensacola. It appears that *P. vossi* is rare, or because of its possible burrowing behavior, has previously eluded more conventional sampling methods such as otter trawls. All of the specimens of the new species were obtained using a triangle dredge, which is capable of digging into the substrate where this species was found (mud, sand with seagrasses, and algal rubble).

Of the 15 species of *Portunus* now described from the western Atlantic, only two, *P. bahamensis* and *P. rufiremus* Holthuis, have not been reported from the Gulf of Mexico and appear to have restricted distributions. *P. bahamensis* has been found only in the Bahamas (Rathbun, 1930; Garth, 1978; Lemaitre, 1984), and *P. rufiremus* is known only from the coast of Suriname and French Guiana, on the northeastern coast of South America (Holthuis, 1959; A. B. Williams, pers. comm.). The possibility exists that *P. vossi* is a species with a distribution limited to the Gulf of Mexico; however, this can only be ascertained with additional sampling.

ACKNOWLEDGMENTS

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LITERATURE CITED

- Garth, J. S. 1978. Marine biological investigations in the Bahamas. 19. Decapoda Brachyura. *Sarsia* 63: 317–333.
- and W. Stephenson. 1966. Brachyura of the Pacific coast of America, Brachyrhyncha: Portunidae. *Allan Hancock Mon. Mar. Biol.* 1: 1–154.
- Holthuis, L. B. 1959. The Crustacea Decapoda of Suriname (Dutch Guiana). *Zool. Verh.* 44: 1–296.

- . 1969. *Portunus binoculus*, n. sp., a new deep-water swimming crab from the Caribbean region (Crustacea, Decapoda, Brachyura). *Bull. Mar. Sci.* 19: 409–427.
- Lemaitre, R. 1984. Decapod crustaceans from Cay Sal Bank, Bahamas, with notes on their zoogeographic affinities. *J. Crust. Biol.* 4(3): 425–447.
- Rathbun, M. J. 1930. The Cancroid crabs of America of the families Euryalidae, Portunidae, Atellectyclidae, Cancridae, and Xanthidae. *U.S. Natl. Mus. Bull.* 152: 1–609.
- Williams, A. B. 1984. Shrimps, lobsters, and crabs of the Atlantic coast of the eastern United States, Maine to Florida. Smithsonian Institution Press, Washington, D.C. 550 pp.

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ADDRESS: Smithsonian Oceanographic Sorting Center, National Museum of Natural History, Washington, D.C. 20560.

REMEMBRANCES

I was Gil Voss' last Ph.D. student. My first encounter with Gil was in 1979, when early one Monday morning I nervously entered his office with the hope that he would accept me as his graduate student to pursue my interests in crustacean systematics. Surprisingly, his first words to me were in Spanish, first welcoming me to the Rosenstiel School of Marine and Atmospheric Science (RSMAS), and then following with an account of his recent trip to Cartagena, Colombia (my native city), including descriptions of several of my friends. At first instance I thought his use of Spanish was an attempt to impress me—after all, some had warned me to expect a tough, dogmatic professor (but at that time I had little choice, so I entered his office anyway). Fortunately, this premonition proved entirely wrong. When I got to know him better, I realized that his use of Spanish was just a reflection of another aspect of Gil's multi-faceted personality (one that I should add, could escape his biographers and for which reason I wish to remember him here), that is his understanding of the Hispanic idiosyncrasy. He was especially sympathetic towards Latin-American students, and like few others, understood very well the environment in which they had to work in their home countries, and the sacrifices they had to make to come to the U.S. in search of a higher degree as well as to achieve scientific recognition. For this reason, I think, and of course also because of Gil's well known name in Latin America, he attracted a considerable number of Hispanic students, many of whom became respected scientists in their own right. Gil's interest in Latin America, however, went beyond the use of Spanish in casual conversation. He was a great fan of the South-American writers, for example, and always asked me to bring back to him from my trips to Colombia the latest novels of Garcia Márquez, Vargas Llosa, Borges, etc. A few days after my return, he would sit in my office (often for hours), commenting and laughing about the books I had brought him.

I was both fortunate and unfortunate to have met Gil during the last decade of his life. I say unfortunate only because by the time I arrived at RSMAS the heydays of Gil's oceanographic work had long passed, thus, I missed the opportunity to participate in the milestone cruises of the PILLSBURY, GERDA, and others. I was very fortunate, however, because I knew him during a period of his life when, perhaps more than ever, he liked to converse about his experiences at sea, and in particular his favorite subject, the history of oceanography. He was a voracious reader of anything related to this, and left, unfinished, a manuscript on the subject. Some students who attended his courses, and others who simply had to listen to him, often complained about how much he liked to boast about the expeditions he had commanded as chief scientist, or the many sea stories that were quite often unrelated to the class subject, all of which took substantial portions of class time.

Indeed, when Gil got started, few could stop him. One of his favorite stories was the one about “the trawl that got away” (because of someone else’s carelessness, of course), as it was being lifted on deck during an expedition to the Gulf of Guinea. This incident came to be known among his students as the “biggest trawl ever,” and we learned to expect to hear about it (along with other favorite stories), in each of Gil’s courses. I for one, however, could not wait to get him to become anecdotal, and in fact often approached him after class, or during lunch at the RSMAS commons, with the hope of getting him started on any of a wide variety of subjects, including the adventures of the scientist-pirate Dampier, the life of early settlers in southeast Florida, the early oceanographic expeditions, the history of Panamá, or even the quality of rum in the Caribbean.

For sure, we’ll never see another scientist like Gil Voss. He was after all, one of the pioneers in tropical marine biology, and was unique in many ways, including the pronunciation of some names—he always pronounced “Miama,” for example, instead of “Miami.” Naming this portunid crab after him is but a small recognition of his work, and the man who genuinely cared about my professional career as well as that of other Hispanics. But at least *Portunus vossi* lives very near the environment that he so dearly loved and defended. This one’s for you Gil; may it never be synonymized!